

Claims

1. (Currently amended) A common subscriber managing apparatus for use in an Internet Protocol network in which a circuit network for voice and a packet network for data are integrated, the apparatus comprising:

first portable user terminating means satisfying media voice or data standard supported in the network;

wireless interfacing means for controlling wireless resources of said user terminating means and wireless traffic, controlling handoff, realigning data from and to the packet network based on a request of said user terminating means to have interfacing condition, providing the realigned data to said user terminating means, and transferring the media to a second user terminating means;

call controlling means for controlling a call between the wireless interfacing means and common subscriber managing means; and

common subscriber managing means for providing Security Association setup function for voice processing and commonly managing mobility management, Quality of Service, authentication and authorization management, accounting management and service management functions for said first user terminating means by using a common subscriber database, wherein the common subscriber managing means uses a first protocol for mobility management and service management and a second protocol for Quality of Service management, for authentication and accounting management as application layer protocol, and for constructing protocol stack for implementing common subscriber management function.

2. (Original) The apparatus as recited in claim 1, further comprising service managing means for performing the service management functions.

3. (Canceled)

4. (Currently amended) The apparatus as recited in claim 3 2, wherein said common subscriber managing means uses User Datagram Protocol/Transmission Control Protocol as a transmission layer protocol.

5. (Currently amended) The apparatus as recited in claim 3 2, wherein said common subscriber managing means uses IP (Internet Protocol) as a network layer protocol.

6. (Currently amended) A method for managing commonly subscribers for use in an Internet Protocol network in which a circuit network for voice and a packet network for data are integrated, the method comprising the steps of:

(a) modeling to provide, by a server, mobility management, Quality of Service, authentication and authorization management, accounting management and service management for a roaming terminal by using a common subscriber database for all Internet Protocol service, wherein, during step (a), the method uses a first protocol for mobility management and the service management and a second protocol for Quality of Service management, for authentication and accounting management as application layer protocol, and for constructing protocol stack for implementing common subscriber management function; and

(b) setting SA (Security Association) function for voice processing by setting up a call between an ALL-IP visiting network and a home network by the server and commonly managing

the mobility management, the QoS, the authentication and authorization management, the accounting management and the service management.

7. (Canceled)

8. (Original) The method as recited in claim 7, wherein, during step (a), the method uses User Datagram Protocol/Transmission Control Protocol as a transmission layer protocol.

9. (Original) The method as recited in claim 7, wherein, during step (a), Internet Protocol is used as a network layer protocol.

10. (Currently amended) The method as recited in claim 6, wherein the step (b) includes:

(i) when an originating Radio Access Network (RAN_O) transmits a call setup request message to an originating Call Control Function (CCF_O), transferring an access request message from the CCF_O to a visiting common subscriber server (CSS_V);

(ii) searching a Home CSS (CSS_H) by the CSS_V for proxy processing of a corresponding message;

(iii) obtaining by the CSS_V a Temporary Local Directory Number and location information of a terminating subscriber from a terminating Call Control Function (CCF_T) to transfer said Temporary Local Directory Number TLDN and the said location information to said CSS_H;

(iv) transferring a Security Association setup message from said CSS_V and said CSS_H to said RAN_O and the location information, respectively, and setting said Security Association between said RAN_O and said location information;

(v) when said CSS_V receives a access response message, transferring a path reset request message for call setup for the said location information from said CCF_O to said RAN_O; and

(vi) setting up a call between the Internet Protocol visiting network and the home network by transferring the call setup request message from said location information to the RAN_T and transferring a call setup completion message from said location information to said RAN_O.

11. (Original) The method as recited in claim 6, wherein step (b) includes:

(i) when an originating Radio Access Network (RAN_O) transmits a call setup request message to an originating Call Control Function (CCF_O), transferring an access request message from said CCF_O to a visiting common subscriber server (CSS_V);

(ii) searching a Home CSS (CSS_H) by the CSS_V for proxy processing of a corresponding message;

(iii) obtaining through said CSS_H a Temporary Local Directory Number (TLDN) and location information (RAN_T) of a terminating subscriber from a terminating Call Control Function (CCF_T) to said CCF_T;

(iv) requesting a service by said CSS_H and obtaining service related profile from a server corresponding to said service by the CSS_H;

(v) providing said TLDN, said RAN_T IP address, and service related information for the terminating subscriber, from said CSS_H to said CSS_V;

(vi) transferring a Security Association setup message from said CSS_V and said CSS_H to said RAN_O and said RAN_T, respectively, and setting said Security Association between said RAN_O and said RAN_T;

(vii) when said CSS_V receives an access response message, transferring a path reset request message for call setup for said RAN_T from said CCF_O to said RAN_O; and

(viii) setting up a call between the Internet Protocol visiting network and the home network by transferring said call setup request message from said RAN_O to said RAN_T and transferring a call setup completion message from said RAN_T to said RAN_O.

12. (Currently amended) The method as recited in claim 6, wherein step (b) includes:

(i) when an originating Radio Access Network (RAN_O) transmits a call setup request message to an originating Call Control Function (CCF_O), transferring an access request message from said CCF_O a visiting common subscriber server (CSS_V);

(ii) searching a Home common subscriber service (CSS_H) by said CSS_V for proxy processing of a corresponding message;

(iii) using said CSS_H for requesting a service and mobility to a service server;

(iv) providing a Temporary Local Directory Number (TLDN) and location information (RAN_T IP address) of a terminating subscriber from said CSS_H to said CSS_V;

(v) transferring a Security Association setup message from said CSS_V and said CSS_H to said RAN_O and said RAN_T, respectively, and setting said Security Association between said RAN_O and said RAN_T;

(vi) when said CSS_V receives a access response message, transferring a path reset request message for call setup for said RAN_T from said CCF_O to said RAN_O; and

(vii) [[i)] setting up a call between the Internet Protocol visiting network and the home network by transferring the call setup request message from said RAN_O to said RAN_T and transferring a call setup completion message from said RAN_T to said RAN_O.

13. (Original) In an Internet Protocol network having a processor, a computer readable recording medium for recording a program for implementing the functions of:

(a) modeling to provide, by a server, mobility management, Quality of Service, authentication and authorization management, accounting management and service management functions for a roaming terminal by using a common subscriber database for Internet Protocol service; and

(b) setting a Security Association function for voice processing by setting up a call between an Internet Protocol visiting network and a home network by the server and commonly managing the mobility management, Quality of Service, authentication and authorization management, accounting management, and service management functions.

14. (NEW) A common subscriber server for use in an Internet Protocol network in which a circuit network for voice and a packet network for data are integrated, comprising:

a common subscriber managing block for providing authentication management commonly in basis of the circuit network and the packet network; and

a call controlling block for controlling a call between the common subscriber managing block and the mobile station.

15. (NEW) The common subscriber server as recited in claim 14, wherein the common subscriber managing block provides Security Association setup function for voice processing in the circuit network.

16. (NEW) The common subscriber server as recited in claim 14, wherein the common subscriber managing block provides mobility management, authorization management and service management functions.

17. (NEW) The common subscriber server as recited in claim 16, wherein the common subscriber managing block provides accounting management.

18. (NEW) The common subscriber server as recited in claim 17, wherein the common subscriber managing block provides Quality of Service.

19. (NEW) The common subscriber server as recited in claim 17, wherein the common subscriber managing block uses at least one of common subscriber database.

20. (NEW) The common subscriber server as recited in claim 19, wherein common subscriber managing block uses a DIAMETER protocol as application layer protocol.

21. (NEW) The common subscriber server as recited in claim 19, wherein said common subscriber managing block uses a User Datagram Protocol/Transmission Control Protocol as a transmission layer protocol.

22. (NEW) The common subscriber server as recited in claim 19, wherein said common subscriber managing block uses an Internet Protocol as a network layer protocol.

23. (NEW) The common subscriber server as recited in claim 19, wherein the common subscriber managing block uses a LDAP protocol for management functions.

24. (NEW) The common subscriber server as recited in claim 14, further comprising a service managing block for performing the service management functions.

25. (NEW) A mobile communication system in which a circuit network for voice and a packet network for data are integrated, comprising:

a mobile station satisfying media voice or data standard supported in the network;

a radio access network (RAN) including a wireless interfacing block for controlling wireless traffic transmitted from and to the mobile station; and

a network including a common subscriber server having a common subscriber managing block for providing authentication management commonly in basis of the circuit network and the packet network and a call controlling block for controlling a call between the common subscriber managing block and the mobile station.

26. (NEW) The mobile communication system as recited in claim 25, wherein the radio access network (RAN) controls wireless resources of the mobile station and handoff, realigns data from and to the packet network based on a request of the mobile station to have interfacing condition, provides the realigned data to the mobile station, and transfers the media to another mobile station.

27. (NEW) The common subscriber server as recited in claim 25, wherein the common subscriber managing block provides Security Association setup function for voice processing in the circuit network.

28. (NEW) The common subscriber server as recited in claim 25, wherein the common subscriber managing block provides mobility management, authorization management and service management functions.

29. (NEW) The common subscriber server as recited in claim 25, wherein the common subscriber managing block provides accounting management.

30. (NEW) The common subscriber server as recited in claim 29, wherein the common subscriber managing block provides Quality of Service.

31. (NEW) The common subscriber server as recited in claim 29, wherein the common subscriber managing block uses at least one of common subscriber database.

32. (NEW) The common subscriber server as recited in claim 31, wherein common subscriber managing block uses a DIAMETER protocol as application layer protocol.

33. (NEW) The common subscriber server as recited in claim 31, wherein said common subscriber managing block uses a User Datagram Protocol/Transmission Control Protocol as a transmission layer protocol.

34. (NEW) The common subscriber server as recited in claim 31, wherein said common subscriber managing block uses an Internet Protocol as a network layer protocol.

35. (NEW) The common subscriber server as recited in claim 31, wherein the common subscriber managing block uses a LDAP protocol for management functions.

36. (NEW) The common subscriber server as recited in claim 25, further comprising a service managing block for performing the service management functions.